

AMENDMENTS TO THE CLAIMS

Please amend claim 22 as indicated below.

Pursuant to 37 C.F.R. § 1.121 the following listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of the Claims:

Claims 1-11 (Canceled)

Claim 12 (Currently Amended): A method for treating a crystal having nonlinear optical properties and including foreign atoms which bring about specific absorption of incoming light, the method comprising:

converting the foreign atoms in the crystal to a lower valency state by an oxidation process, thereby liberating electrons;

removing, during the oxidation process, the liberated electrons from the crystal using an external current source during the oxidation so as to reduce an optical absorption value of the crystal.

Claim 13 (Previously Presented): The method as recited in Claim 12, wherein the crystal comprises one of the following: a lithium niobate crystal and a lithium tantalite crystal.

Claim 14 (Previously Presented): The method as recited in Claim 12, wherein the foreign atoms comprise doping elements provided to the crystal by doping prior to the oxidation.

Claim 15 (Previously Presented): The method as recited in Claim 14, wherein the doping elements comprise at least one of the following extrinsic ions: iron ions, copper ions, and manganese ions, the extrinsic ions existing in a concentration of more than $1 \times 10^{25} \text{m}^{-3}$, and said extrinsic ions increasing the dark conductivity of the crystal.

Claim 16 (Previously Presented): The method as recited in Claim 12, wherein the lower valency state comprises $3+$.

Claim 17 (Previously Presented): The method as recited in Claim 12, further comprising:

placing the crystal between a plurality of electrodes, which are connected to a voltage source; and

applying between the plurality of electrodes a voltage substantially between 1 V and 1200 V.

Claim 18 (Previously Presented): The method as recited in Claim 17, wherein one of the electrodes comprises a corona electrode which is not in contact with the crystal, the corona electrode, being connected to a negative terminal of the voltage source.

Claim 19 (Previously Presented): The method as recited in Claim 17, wherein the voltage is:

substantially 1000 V if one of the plurality of electrodes comprises a corona electrode which is not in contact with the crystal; and

substantially 10 V if the plurality of electrodes are contacting the crystal.

Claim 20 (Previously Presented): The method as recited in Claim 12, wherein the external current source generates a current in the crystal substantially between 0.01 mA and 15 mA.

Claim 21 (Previously Presented): The method as recited in Claim 12, wherein the oxidation produces a crystal temperature substantially between 300 °C and 1200 °C.

Claim 22 (Currently Amended): A nonlinear optical component including foreign atoms and produced according to the process of Claim 12, wherein the component has a residual light absorption of less than 0.4 mm^{-1} for light wavelengths in the range of about 500 nm to 1100 nm.